RESPONSE

Remarks

The Office Action indicated displeasure at the apparent discourteous use of a trademark, as expressed in the following statement, reproduced here for convenience.

> The use of the trademark NEOCRYL CX-100 set forth in the specification at page 15, bottom paragraph and Table 6 has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.
>
> Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

The term CX-100 was used as an identifier during experimental development of the present invention. This usage was not intended to engender disrespect of trademark protection. The parenthetical acknowledgement of NEOCRYL CX-100 was included in the application to recognize NeoResins as the supplier of this material.

Rejection of Claims Under 35 U.S.C. §112

The Office Action includes rejection of claims under 35 U.S.C. §112, second paragraph, as follows:

> Claims 1 - 16 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. More particularly, the Examiner notes that the independent claims (as well as the Abstract) recite ranges of proportions that are set forth in weight percent, which is clearly proper, and also just "parts," which is believed to be unduly vague, indefinite, and confusing.

Applicants agree that weight percent is a proper convention for presenting component concentrations. The same is true for parts per hundred (pph), which is widely used to designate amounts of materials used in polymer formulations (see footnote below Table 2 of the present invention). Applicants have identified each point in the present application that, except for the claims, involves the word "parts." There are six instances at page 4, line 18; page 4, line 30; page 11, line 30; page 12, lines 5 - 6; page 12, line 16 and page 18, line 4. Four of these reference points correctly present the relationship between designated parts and 100 parts of polymer. The other two instances relate to ranges of parts that, summed together, reflect a basis of 100 parts. One of ordinary skill in the art would be familiar with common reference to "parts per hundred" and related terminology.

For the reasons given, applicants believe that one having ordinary skill in the art would not be confused by terminology included in the present application for expressing

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quantities of materials used to practice of the present invention. It is respectfully submitted that rejection of claims 1 - 16 under 35 U.S.C. §112, second paragraph, should be withdrawn.

Further claims rejection under 35 U.S.C. §112, first paragraph, was indicated in the Office Action as follows

> Claims 1 - 9 and 12 - 16 are rejected under 35 U.S.C. §112, first paragraph, as based on a disclosure which is not enabling. More particularly, the peel adhesion properties set forth in dependent claim 10 appear to define an essential element of the invention and as such are critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). Note also the paragraph bridging pages 4 and 5 of the specification.

The present invention was developed as an improvement over the subject matter claimed in United States Patent No. 6,472,065 B1. Free radical initiators are subject to both thermal excitation and photo-excitation to generate free radicals that, for the present invention, cause adhesive crosslinking and associated detackification. To overcome premature adhesive detackification it was necessary to evaluate known photoinitiators to identify those showing resistance to free radical generation, during elevated temperature processing of silicon wafers.

A distinguishing feature of adhesive compositions of the present invention is that they "conserve adhesive properties at temperatures from about 115°C to about 155°C" as recited in independent claims 1 and 8. Apart from temperature stabilization, the adhesive composition of claim 10 of the present invention is similar to claim 13 of United States Patent No. 6,472,065 B1, differing therefrom only in limits of adhesion. As such claim 10 simply recites ranges of adhesion for compositions such as those presented in Table 5 of the present invention. As indicated, these ranges are operative ranges of adhesion and are neither critical nor essential to thermal stability of the invention as described above.

It appears that the precedent of *In re Mayhew* has been incorrectly applied. Mayhew's disclosure that "cooling a portion of the molten spelter at the exit side of the bath to a temperature of approximately 800°F. to approximately 860°F. - and - delivering the steel strip from the bath upon passage through the cooled spelter - are essential steps in his inventive process." necessitated inclusion of admitted essential limitations in the claims. The present invention has no such essential limitations and requires only that adhesive compositions according to the present invention are detackifiable to facilitate release of integrated circuit chips produced by dicing silicon wafers (see page 4, lines 1 - 13). Wafer dicing tapes are known, which do not exhibit change in adhesion to facilitate chip removal. This confirms that

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adhesive properties are not essential and may be varied depending on supplier or user preference.

For the reasons given, applicants believe that one having ordinary skill in the art would recognize the present invention as an adhesive composition that includes a free radical initiator that is unresponsive to heat produced at temperatures recited in the claims. It is respectfully submitted that adhesion ranges are neither critical nor essential for the present invention. Rejection of claims 1 - 9 and 12 - 16 under 35 U.S.C. §112, first paragraph, has been overcome and should be withdrawn.

Rejection of Claims Under 35 U.S.C. §103

The Office Action includes claims rejections under 35 U.S.C. §103(a) as follows:

Claims 1 - 16 are rejected under 35 U.S.C. §103(a) as being unpatentable over Ishiwata et al. - 473 (Ishiwata et al. - 242 is cumulative). The reference discloses (note particularly the Abstract, column 6, lines 14 - 32; column 7, line 42 - column 8 line 7; column 8, lines 42 - 44) in certain embodiments substantially an anticipation of at least applicants' broad composition and coated sheet claims except for the presence of a thermally stable free radical initiator operating at the claimed specified temperature range.

M.P.E.P. §2142 places the burden on an examiner to factually support any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness. Specific conditions, presented in M.P.E.P. §706.02(j) require that the Office action, after indicating rejection under 35 U.S.C. §103, set forth:

(A) the relevant teachings of the prior art relied upon, preferably with reference to the relevant column or page number(s) and line number(s) where appropriate.

(B) the difference or differences in the claim over the applied reference(s).

(C) the proposed modification of the applied reference(s) necessary to arrive at the claimed subject matter, and

(D) an explanation why one of ordinary skill in the art at the time the invention was made would have been motivated to make the proposed modification.

In satisfying point (A) of the specific requirements, the Office Action identifies the Abstract, and selected columns and lines of the reference of Ishiwata et al. as bases for rejection of the present application for obviousness. Immediately following these cited portions of Ishiwata et al. the Office Action is vague regarding "certain embodiments," which are not clearly identified.

Differences between the reference and the present invention are given as admitted omissions from Ishiwata et al. according to the statement:

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"certain embodiments (not identified) substantially (an) anticipate of at least applicants' broad composition and coated sheet claims except for the presence of a thermally stable free radical initiator operating at the claimed specified temperature range." The underlined portion of this statement is the claimed subject matter of the present invention. Admission by the Office Action that Ishiwata et al. does not teach these limitations is clear evidence that this reference fails to provide basis for rejection of the present invention for obviousness.

The present invention is a continuation-in-part application of United States Patent Application No. 09/615,389 (now United States Patent No. 6,472,065 B1). Claims of the present invention reflect new subject matter added to the parent application. The new subject matter is directed to thermally stable free radical initiators to conserve properties of adhesive compositions exposed to temperatures in the range from about 115°C to about 155°C (see page 5, lines 5 - 9). Further evidence of the focus of new matter beyond the '389 application is found in the present invention at page 13, lines 10 - 30; page 15, line 17 to page 16, line 9, page 17, lines 19 to 32 and tables 5 and 6 and related information. Each of the identified portions relates to development of detackifiable adhesives that are thermally stable in the claimed temperature range.

Applicants are familiar with Ishiwata et al. since it was shown to be ineffective as a reference against the patent application that resulted in United States Patent No. 6,472,065 B1. Previous disqualification of the reference and admission, in the current Office Action, that Ishiwata et al fails to teach subject matter claimed in the present invention provides two compelling reasons why the reference fails to render the present invention obvious. Lacking teachings of the present invention, there is nothing that may be used to propose modification of the applied reference(s) or explanation of what would motivate one of ordinary skill in the art at the time the invention was made to modify the reference to produce adhesive compositions and coated sheets claimed by the present invention.

The Office Action further rejects claims under 35 U.S.C. §103(a) according to the following statement reproduced here for convenient reference.

> However, note that the reference teaches radiation curable adhesive tapes and that polymerization initiators are taught; also, it is strongly believed that such free radical initiators as claimed is well known to one of ordinary skill in the art. Note also that column 8, lines 1 - 3 teach the preferred range of the urethane acrylate compound mixed with the acrylic adhesive.
>
> Finally, the remaining parameters that are not either expressly or inherently disclosed such as the particular peel adhesion properties set forth in claims 10 and 11 are believed to be obvious optimization modifications using commercially available compositions to one of ordinary skill, in the absence of unexpected results.

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The Office Action provides no evidence identifying thermally stable free radical initiators in support of the statement that, "it is strongly believed that such free radical initiators as claimed is well known to one of ordinary skill in the art." It was admitted in the Office Action that Ishiwata et al. does not teach limitations of claims of the present invention, particularly concerning elevated temperature behavior of free radical initiators. Obvious optimization, by one of ordinary skill in the art, is considered unlikely without knowledge of the present invention.

Applicants find confusion in the teachings of Ishiwata et al related to the use of urethane acrylates. The suggestion of "preferably 0.5 to 100 parts by weight and more preferably 10 to 100 parts by weight, for 100 parts by weight of the acrylic adhesive."(Ishiwata et al - column 8, lines 1 - 3) appears in contradiction to Examples 12 and 14, which exhibit low initial adhesion, and Example C6 where the adhesive composition of Ishiwata et al is too aggressive in the absence of a silicone acrylate material. These observations show that the upper and lower parts of the suggested urethane acrylate range of the reference are inoperative and there is no guidance towards useful amounts of urethane acrylate.

For the reasons given, Ishiwata et al. neither teaches nor suggests all of the limitations of claims 1 - 16 of the present invention. The rejection of claims 1 -16 under 35 U.S.C. §103(a) as being unpatentable over Ishiwata et al. has been overcome and should be withdrawn.

Rejection of Claims for Non-Statutory Double Patenting

The following statement from the Office Action raises an issue of claims conflict between the present invention and claims of a related United States patent.

> Claims 1 - 16 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 - 20 of United States Patent No. 6,472,065 B1.
>
> Although the conflicting claims are not identical, they are not patentably distinct from each other because the presence of a thermally stable free radical initiator is believed to be well within the ordinary skill of the art, in the absence of unexpected results.

The Office Action relies upon unsubstantiated beliefs as reflected by statements in point 7. and point 9 as follows:

Point 7

"it is strongly believed that such free radical initiators - - are well known - - -."

"the remaining parameters - - are believed to be obvious optimization modifications - ."

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Point 9

"the presence of a thermally stable free radical initiator is believed to be well within the ordinary skill of the art - -."

Applicants submit that reliance on beliefs, finding support only by the present invention, has influenced the determination of conflict between patented claims and claims of the present invention. The following reasons are given to confirm the separate identity of claims of the present invention.

1) The Office Action admits that "the conflicting claims are not identical, - -."

2) Elimination of premature detackification using thermally stable photoinitiators is a significant improvement that should be separately patentable.

3) Experimentation beyond obvious optimization was required:

- to identify photoinitiators that are thermally stable from others, which are not.
- to confirm compatibility and functionality of selected photoinitiators with other adhesive components.
- to explore the effect of thermally stable photoinitiators on the ranges of adhesion for unexposed and photo-detackified adhesives (see Table 6).

4) Claims of the patent relate to change in properties during exposure of adhesive compositions and clear adhesive coated sheets to ultraviolet radiation. The present invention teaches conservation of properties of adhesive compositions and clear adhesive coated sheets with respect to the elevated temperature range recited in the claims. Clear differences in the underlined portions highlight the separateness of the inventions and lack of conflict between claims of each.

Prior Art Not Relied Upon

The Office Action referred to Amagi et al. and Ulrich as prior art made of record and not relied upon, but gave no specific references that applicants could review.

Applicants have made an earnest attempt to respond to each point made by the Examiner. Based on the foregoing reasons, it is submitted that the application is in condition for allowance. Request is respectfully made for reconsideration of the application and allowance of claims 1 - 16 as separately patentable.

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Please charge Deposit Account 13-3723 any amounts due and owing by reason of this response. For further questions, please contact Applicant's agent who may be reached at telephone number (512) 984-5258.

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GROUP 1700

Respectfully submitted,

Registration Number	Telephone Number
42,286	(512) 984-5258
Date July 16, 2003	

By Alan Ball
Alan Ball

Office of Intellectual Property Counsel
3M Innovative Properties Company
P.O. Box 33427
St. Paul, Minnesota 55133-3427
Facsimile: (651) 736-3833

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